

## Preparation of linear pentenenitrile

## Abstract

- 5 A process is described for preparing 3-pentenenitrile, characterized by the following process steps:
- (a) isomerizing a reactant stream which comprises 2-methyl-3-butenitrile over at least one dissolved or dispersed isomerization catalyst to give a stream 1 which  
10 comprises the at least one isomerization catalyst, 2-methyl-3-butenitrile, 3-pentenenitrile and (Z)-2-methyl-2-butenitrile,
- (b) distilling stream 1 to obtain a stream 2 as the top product which comprises 2-methyl-3-butenitrile, 3-pentenenitrile and (Z)-2-methyl-2-butenitrile, and a  
15 stream 3 as the bottom product which comprises the at least one isomerization catalyst,
- (c) distilling stream 2 to obtain a stream 4 as the top product which, compared to stream 2, is enriched in (Z)-2-methyl-2-butenitrile, based on the sum of all pen-  
20 tenenitriles in stream 2, and a stream 5 as the bottom product which, compared to stream 2, is enriched in 3-pentenenitrile and 2-methyl-3-butenitrile, based on the sum of all pentenenitriles in stream 2,
- (d) distilling stream 5 to obtain a stream 6 as the bottom product which comprises 3-  
25 pentenenitrile and a stream 7 as the top product which comprises 2-methyl-3-butenitrile.